ABSTRACT OF THE DISCLOSURE

A gradient sensitivity based method is described for reducing Peak to Average power Ratio in multicarrier communication systems. The method involves definition of a differentiable penalty function which has non-zero values whenever there is a peak violation. The gradient of the function with respect to the symbol magnitudes and phases is evaluated at the given symbol vector. Symbol perturbations are computed in the opposite direction of the gradient in such a way that the peaks are reduced and the amount of errors introduced in the symbols is not large enough to affect the decoding process. In order to reduce computation, a variant of the method is proposed where a peak reduction kernel is precomputed and stored. The kernel is rotated to the location of the peak and added with proper sign to reduce the peak to average power ratio.